

# MATTERS ARISING

## Teenagers and the risk of STD

The recent paper on teenagers and the risk of sexually transmitted diseases by Mellanby *et al* demonstrated that in a cross section of 15–16 year olds knowledge of STD was poor.<sup>1</sup> Only 28% of answers to five questions related to STD were correct. We thought it would be of interest to include the same five questions in a questionnaire administered to new University students attending the recent "Freshers Fayre" at University College, London. Students passing our "Sexual Health" stall were asked to complete the questionnaire. Few students declined but clearly the students were not a randomly selected sample.

There were 529 completed questionnaires. Greater knowledge was evident in this population with 60% of answers to the five questions being correct. When compared with the teenager study a higher proportion of correct responses was obtained for all five questions. In the teenager study the questions most frequently answered incorrectly were first, a belief that condoms give total protection against STD (56% incorrect), and second that HIV is now the commonest sexually transmitted disease (53% incorrect). In the students we ques-

tioned the proportion of incorrect responses to these two questions was considerably lower at 30% and 20% respectively.

The table lists the answers obtained in our survey using the five questions used by Mellanby *et al* plus four additional questions. Although the students' knowledge of STD and sexual health awareness was generally good almost half those questioned felt that they had put themselves at risk of an STD. Perhaps this reflects the crucial gap between knowledge and practice of safer sex.

We found that providing information at a "Freshers Fayre" stall was a productive and simple way of promoting sexual health and increasing awareness of the services offered by this genitourinary medicine clinic. Some 1500 students obtained information leaflets from us over two days and the questionnaire provided a focus for discussion. We would encourage other genitourinary medicine clinics serving student populations to look for similar opportunities to disseminate knowledge and increase awareness of sexually transmitted infections and sexual health.

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1 Mellanby A, Phelps F, Lawrence C, Tripp JH. Teenagers and the risks of sexually transmitted diseases; a need for the provision of balanced information. *Genitourin Med* 1992; 68:241–4.

Table Answers to questionnaire (n = 529)

	True	False	Don't know
1 HIV is the only sexually transmitted disease that cannot be cured.	32%	58%	10%
2 HIV is now the most common sexually transmitted disease.	20%	65%	15%
3 You can catch warts from sexual intercourse.	72%	12%	16%
4 Using a condom during sexual intercourse will give you total protection against sexually transmitted diseases.	30%	66%	4%
5 You can catch chlamydia from sexual intercourse.	40%	6%	54%
	Yes	No	Don't know
6 Does vaseline/baby oil/oils break male condoms?	59%	22%	19%
7 Should you have a condom on at the moment you penetrate?	94%	3%	3%
8 If you've got a spot or sore on your genitals does this increase your risk of HIV when having sex?	71%	13%	16%
9 Do you feel that you have ever put yourself at risk of a sexually transmitted infection?	47%	47%	6%

## A colposcopic case control study of cervical squamous epithelial lesions

We are concerned that the findings of Dr Evans and his colleagues presented in their colposcopic study of genitourinary medicine clinic attenders<sup>1</sup> do not support their major conclusions that anogenital warts are not a risk factor for histological cervical HPV or CIN.

The first methodological difficulty with the study is the assumption that routine histopathological reporting can reliably diagnose the features of cervical HPV infection. Robertson *et al*<sup>2</sup> confirmed previous observations of significant variability in histopathological reporting of cervical biopsies. They provided data concerning the reliability and reporting features of HPV infection alone and showed a Kappa statistic of 0.11, indicating very poor reproducibility.

A more fundamental problem lies in the way the study results have been analysed.

The authors report that they conducted a case control study in order to discover whether anogenital warts were an indication for colposcopy, because of their possible role as a marker for cervical intra-epithelial neoplasia (CIN) or human papillomavirus infection (HPVI).

Two criteria were used for proceeding to colposcopy in the study, namely, a history of, or current, anogenital warts, or an abnormal smear. The authors find (as have many before) that there was a strong association between abnormal smear and CIN. The association between anogenital warts and CIN was less strong. It is therefore argued that anogenital warts are relatively protective for CIN.

For a case control comparison to provide a valid estimate of the relative risk associated with an exposure, both cases and controls must be representative of all those with similar respective disease status in the population under consideration. In particular,

inclusion in the study must be independent of the exposure under consideration to avoid selection bias. This latter condition is systematically violated in the author's study, since those women without warts must have abnormal cytology, which is known to be associated with CIN and HPVI.

A simple hypothetical example will illustrate the problem. Suppose we choose to study 100 women. Fifty of these are included because they have dyskariotic smear and no warts, and the other 50 because they have warts and no dyskariosis. Suppose the risk of CIN among women with dyskariosis to be 0.4 (RR = 16) and that among women with warts to be 0.1 (RR = 4), that is assuming that the risk for women with neither is 0.025. By applying these risks to our hypothetical sample we obtain the numbers of subjects in each group who have CIN.

Dyskariosis and CIN =  $50 \times 0.4 = 20$

Dyskariosis but no CIN =  $50 \times 0.6 = 30$

Warts and CIN =  $50 \times 0.1 = 5$

Warts but no CIN =  $50 \times 0.9 = 45$

We now perform a case-control comparison in the manner of the authors:

No CIN CIN  
Warts 45/75 5/25 (OR = 0.166)

Thus warts appear to be negatively correlated with CIN despite a true relative risk of 4.

It would appear that the negative association between anogenital warts and CIN reported in the authors' study suggests merely that women who have warts are less likely to have CIN than women with dyskariosis. The conclusions of the study are therefore entirely unsupported. Furthermore the authors themselves note that 16% of those women found to have warts on examination were found to have CIN, and 18% of women with a past history of warts had CIN. A reanalysis of these valuable data based on a clearer understanding of epidemiological methods and principles should prove of considerable interest.

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1 Evans BA, Bond RA, MacRae KD. A colposcopic case-control study of cervical squamous intraepithelial lesions in women with anogenital warts. *Genitourin Med* 1992;68: 300–4.

2 Robertson AJ, Anderson JM, Swanson Beck JS, *et al*. Observer variability in histopathological reporting of cervical biopsy specimens. *J Clin Pathol* 1989;42:231–8.

### Evans *et al* reply:

Histological features of HPVI have been shown to correlate well with HPV detection by DNA-DNA hybridisation.<sup>1</sup> It would appear that the Scottish pathologists lacked experience in recognising these features.<sup>2</sup> Our finding of significant associations with cervical HPVI is further evidence that our data are meaningful and not random.

Unfortunately, Dr Renton and his colleagues have misunderstood our study and postulate a hypothetical example that is misleading. Put simply, the influence of warts, if any, on CIN in dyskariotic patients is based on a comparison between patients with dyskariosis alone and patients who